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ABSTRACT

This study explored how many teachers were leaving public school districts in Illinois, Indiana, Minnesota, and Wisconsin during their first 5 years in teaching. Researchers analyzed four types of novice teachers, including those who: taught continuously in the same district all 5 years, transferred to another district within the state but remained in the state all 5 years, left public school teaching in a state and did not return to teaching, and left public school teaching in a state but returned. Statements were gathered from 5-year veterans regarding their reasons for staying with teaching. Over the 5 years, the cumulative loss of beginning teachers from the district that hired them was just over 50 percent (half of whom left teaching altogether). Minority teachers and teachers who entered the profession at age 30 or younger departed at significantly higher rates. While minority teachers were less likely to leave teaching altogether, they were much more likely to transfer among school districts. There was no significant difference in turnover by gender. Teachers with graduate degrees had lower turnover rates. Urban teachers were significantly more likely to move out of their district (though not to leave teaching). Mathematics and science teachers were much more likely to leave teaching and less likely to transfer among districts. (Contains 30 references.) (SM)

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Teacher Turnover in the Midwest: Who Stays, Leaves, and Moves? Policy Issues

Neil D. Theobald and Robert S. Michael

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About This Issue

You'll note several important findings in this edition of *Policy Issues*. First, authors Theobald and Michael give a new definition of teacher turnover. While not a finding in and of itself, by distinguishing teachers who transfer within district or across state lines from those who leave the profession, Theobald and Michael make an important point about loss of continuity and resources for local school districts. Traditionally, teacher turnover has referred to those who leave the teaching profession. But as Theobald and Michael point out, for a local district, whether a teacher is leaving the profession or moving to another district, the impact is the same – that teacher must be replaced. Hence, teacher turnover in its traditional sense is too narrow a description.

A second finding looks at the unique mobility patterns of minority and content specialist teachers. Briefly, minority teachers tend to transfer across districts rather than leave the profession. Minority teachers tend to move up the teaching ladder, transferring to more favorable environments, with each new district. The policy implications are clear: Districts need support in creating the appropriate mix of incentives to attract and retain high-quality teachers of color, particularly in highly challenged environments. Similar to minority teachers' mobility patterns, special education teachers tend to transfer from district to district, presumably improving their working conditions with each move. However, math and most science specialists tend to opt out of teaching rather than transfer across districts. For them, the labor market provides a highly attractive salary and other benefits outside of teaching. Again, the policy implications are that districts need to develop a different mix of strategies to attract and retain specialists in high-need areas.

A Message From Gina Burkhardt, NCREL Executive Director

In this year-end edition of Policy Issues, *NCREL continues its theme of teacher quality. We began in the June 2001 edition with a look at effective recruitment and retention strategies in the Midwest (available online at* ***www.ncrel.org/policy/pubs/html/pivol8/june2001.htm****) and continued in the November 2001edition with a review of the missing links in teacher literacy training. These reports paid attention to two points on the teacher career continuum: preparation and professional development.*

While there are many markers along the teacher's career, one central milestone is the five-year mark. We know from previous research that nearly one-quarter of all new teachers leave the profession within the first five years of teaching, and that figure can escalate to 50 percent in high-poverty, highly challenging environments. Therefore, good data on teachers' mobility patterns becomes critically important in designing and implementing effective recruitment, retention, and professional development policies. It doesn't serve us well to have the strongest recruitment, retention, and professional development policies on paper if we're continually losing teachers along the way.

In this edition of Policy Issues, *the authors share findings from their research on teacher turnover in the Midwest. These findings represent the first part of a two-part study. In this first stage, NCREL and Indiana University are interested in understanding the mobility patterns of beginning teachers. In stage two, the researchers will analyze statements from teachers who have passed the five-year milestone describing why they chose to remain in the profession. Taken together, we begin to compile a more complete picture of the beginning teacher – both the challenges and opportunities, and the support systems that keep new, highly qualified teachers in our public schools.*

Teacher Turnover in the Midwest:

Who Stays, Leaves, and Moves?

By Neil D. Theobald and Robert S. Michael

"Teachers constitute the basic manipulable input into the educational process as conducted in schools. Whether it is done in knowledge or in ignorance, the shaping of personnel policies is the shaping of school education" (Bowman, 1973).

Changing and improving schools has become, as Seymour Sarason observes, one of the largest cottage industries in 21st century America. Innumerable

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strategies for school improvement have been developed and are subject to on-going experimentation. Yet, as Bowman so aptly notes, educating children is essentially a labor-dependent enterprise, and as such, school improvement efforts focus on placing qualified teachers in every elementary and secondary classroom. This article summarizes briefly the first component of an on-going project that explores how many teachers are leaving public school districts, in four Midwest states (IL, IN, MN, WI), during their first five years in teaching. This research project analyzes separately four types of novice teachers, those who: (1) taught continuously in the same district all five years ("stayers"), (2) transferred to another school district(s) within a state, but remained in the same state all five years ("movers"), (3) left public school teaching in a state and did not return to teaching ("leavers"), and (4) left public school teaching in a state, but returned ("returnees"). The second component of the project consists of gathering statements from five-year veteran teachers concerning their reasons for staying in the profession. In short, the first component of this research focuses on determining which kinds of teachers are more prone to stay in teaching, and the second component seeks to answer why they choose to stay.

Background

The issue of staffing all classrooms with qualified teachers has received increased attention in recent years due to accumulating research evidence showing that teacher quality (e.g., subject matter knowledge, cognitive ability, and selectivity of college attended) is the single most important school factor affecting student achievement.

Another reason teacher supply receives considerable attention is research showing that the career of teaching is characterized by very high mobility (Ingersoll, 1995, 2001; Murnane, Singer, Willett, Kemple, & Olsen, 1991). Such high rates of teacher turnover thwart efforts to improve our schools in at least two significant ways. First, research shows that high-performing schools are distinguished by stability, continuity, and cohesion among employees (Bryk, Lee, & Smith, 1990; Coleman & Hoffer, 1987). High rates of teacher turnover can obviously disrupt the stability, continuity, and cohesion of instructors, and thus student

The Role of Educational Reform

Lessons from previous reform experiences suggest that policymakers in the 21st century face a formidable task in devising strategies that will improve the quality of our teaching force. The last two decades of reform were set in motion by commission reports such as *A Nation at Risk*, which sought to rely primarily on state regulatory power in a direct attack on schooling problems — including teacher quality. A key assumption underlying this first wave of reform was that teachers should continue to organize their classrooms as they always had done, only do so harder and faster, and with stricter state scrutiny. Evidence quickly surfaced, though, that added bureaucracy and more centralized control did not improve teacher quality or lead to improved student achievement. Work by Darling-Hammond and Wise (1985) and Rosenholtz (1987) suggests that this first approach may actually have been counterproductive in addressing these issues.

A second reform approach ensued, seeking to reduce bureaucracy and decentralize decision making. Teaching was even more centrally the focus of this "second wave":

"Reforms began to focus on the structure of the teaching occupation and the overall structural features of schools. Thus, teachers' salaries in many states and districts were raised; teachers were often provided with some additional decision making authority; and, to a lesser extent, opportunities were created that would allow teachers to advance professionally without leaving the classroom" (Hirsch, Koppich, & Knapp, 1998, p. 2).

The limited achievements resulting from these efforts spurred the current third wave of reform that seeks to increase the available supply of high-quality teachers. Programs such as Troops to Teachers and Teach for America were implemented nationwide to recruit new candidates into teaching. In addition, many states have instituted alternative certification programs to reduce and postpone formal education training and place mid-career professionals into teaching immediately.

Yet, the payoff from such supply-side initiatives could be short-lived if state and local policymakers do not concurrently implement policies to improve the likelihood that these individuals remain in the profession.

performance. In addition, the abilityof less effective schools to institutionalize a successful reform effort depends crucially on the continued presence of large numbers of teachers who are knowledgeable about, and committed to, the change (Fullan, 1991). While schools and districts undergoing reform often seek changes in staffing to align the skills and expertise of the faculty with a new vision and mission, veteran teachers play a vital role in providing continuing assistance to new teachers and administrators. Several studies point to high turnover in a school's teaching staff as one of the most powerful factors in stifling school improvement efforts (Berman & McLaughlin, 1977; Huberman & Miles, 1984).

Second, the art of teaching children is a developmental process involving a complex set of skills, many of which can be well honed only on the job. While better preservice teacher education can begin the process of improving teacher quality, research clearly shows that inexperienced teachers continue to sharpen their skills and become more effective teachers during the first few years in the classroom. The continual need for school districts to hire new, inexperienced teachers to replace teachers who leave after a very short teaching tenure "can only hinder these districts' efforts to improve the education they provide" (Murnane et al., 1991, p. 65).

Thus, state and local policymakers have come to recognize that efforts to improve elementary and secondary education will depend critically upon our success in attracting, recruiting, and retaining capable people in the teaching profession. Simply put, we cannot have better schools until we have better teachers.

The Project: Tracking Teacher Mobility

Previous research into teacher turnover tended to focus solely on those teachers who leave the profession altogether — "leavers" or group 3 referenced in the opening paragraph of this article (Grissmer & Kirby, 1997; Heyns, 1988; Murnane, 1987; Murnane, Singer, & Willett, 1988). As long as an individual remains in teaching, that individual is not included in such studies. Thus, the traditional approach does not differentiate between a teacher who is employed by five different school districts in a state during the first five years in the profession (a "mover") and a teacher who works in the same district for all five years (a "stayer"). These two teacher career paths have vastly different effects on local school programs, though, because "movers" are indistinguishable — from the perspective of their former employers and former students — from "leavers." It is important to note a limitation of this study is that it does not distinguish between teachers who transfer across schools in a district, and those who move from district to district. Such a distinction would help inform policy at the school level. For a school, any transfer — be it building-to-building or district-to-district — requires a teacher replacement. In this study, however, we concentrate on district-level impact and look at transfers out of district, out of state, and out of the teaching profession.

This project follows the lead of Ingersoll (1995) and views teachers moving among school districts ("movers") to be equally important for analysis as those teachers exiting from the profession ("leavers"). "The premise underlying this perspective is that, whether those departing are moving to a similar job in another organization or leaving the occupation altogether, their departures similarly impact and are impacted by the organization" (Ingersoll, 2001, p. 356). From the perspective of the school, whether a departing teacher is moving to another district or leaving the profession, that individual most likely must be replaced.

The focus on teacher retention within a school district does not, of course, reflect a view that previous research into attrition from the profession is unimportant. Instead, this focus is motivated by a judgment that the decisions that are most likely to influence teacher retention occur at the district level. Therefore, rather than investigating the behavior of a state's teachers, this study analyzes the behavior of teachers within a school district.

The second component of this project is an ongoing survey of 1,000 public school teachers who have continuously taught in the same districts for five years ("stayers"). This component will further our understanding of district characteristics that play a prominent role in their decision to continue teaching. In particular, this portion of the study examines the role of employee compensation, administrative support, and the degree of teacher input into and influence over school policies.

The objectives of this study, thus, are two-fold: first, to document teacher turnover in four Midwest states, and second, to examine closely the role of school characteristics and conditions in teacher turnover. The results of the first component are summarized on the following pages.

The dataset used for this study consists of information on 11,787 teachers who

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began their teaching careers in four Midwest states during the 1995-96 school year. The career of each teacher in the sample is followed from the year of entry through the 2000-01 school year. The dataset provides information on the characteristics of the teachers and their job assignments.

Findings

Teaching is an occupation that loses many of its newly trained practitioners very early in their careers. As shown in Figure 1, over the five-year period, the cumulative losses of beginning teachers from the school district that hired them was slightly more than 50 percent, consisting of 23 percent who moved to different districts and 28 percent who left teaching altogether. These percentages are consistent with previous national findings (Ingersoll, 1995).

Figure 1 also provides information on the relationship between personal characteristics of teachers and the likelihood that they leave their district. In terms of over-all teacher turnover — the sum of the percent of teachers that move among districts and the percent that leave the profession — minority teachers and teachers who enter the profession at age 30 or younger depart at significantly higher rates. Teachers who are 31 or older when they enter the profession and teachers with graduate degrees are significantly less likely to depart. White teachers are also less likely to depart, but this relationship is not as strong as it is for those teachers who enter at an older age or possess a graduate degree.

The results illustrated in Figure 1 emphasize the importance of clearly specifying how "teacher turnover" is to be defined. If we look at the traditional definition of "teacher turnover" (i.e., those teachers who leave the profession altogether), minority teachers are significantly less likely to leave the profession. Researchers have concluded that minority teachers, because they tend to come from lower SES backgrounds, are less occupationally mobile than Whites (Dworkin, 1980; Kemple, 1989). However, the results in Figure 1 show nuanced behavior. While minority teachers are less likely to leave the profession altogether, they are much more likely to transfer among school districts. Theobald and Gritz (1996, p. 21) found that "teachers transfer from their first teaching position to another school district when they confront less desirable situations that are amenable to improvement by transferring to a different public school district" and they leave the profession when confronted with "less desirable situations that cannot be improved by moving to another school district." Thus, it appears that minority teachers are more able to improve their situation by transferring to another district than are other teachers. A possible explanation for this result is that high demand for minority teachers provides them with more job options than are available to other teachers.

Another interesting finding in Figure 1 is the lack of a significant difference by gender. Data from the 1960s and 1970s show that turnover rates among females entering teaching was about 30 percent higher than attrition among men entering at that time. Grissmer and Kirby (1987) explain this result by appealing to the differing "life cycle priorities" of young women and young men and argue that women have been more likely to leave teaching because they do so to raise families. These data suggest that, in the late 1990s, this traditional pattern no longer exists in these four states.

The remaining results are consistent with previous research. Greenberg and McCall (1974) previously found that teachers with graduate degrees had lower turnover rates. Several previous studies have found that teachers' decisions whether to stay or leave the teaching profession are highly influenced by their age at entry (Bobbitt, Leich, Whitener, & Lynch, 1994; Boe, Bobbitt, Cook, Barkanic, & Maislin, 1998).

Figure 2 provides the same information for the 3,194 novice teachers hired by urban school districts in 1995-96. Previous research (Darling-Hammond & Green, 1994; Kozol, 1991; Oakes,

Figure 1. Percent of teacher turnover in five years among 11,787 teachers who entered the profession in four midwestern states in 1995-96, by selected personal characteristics

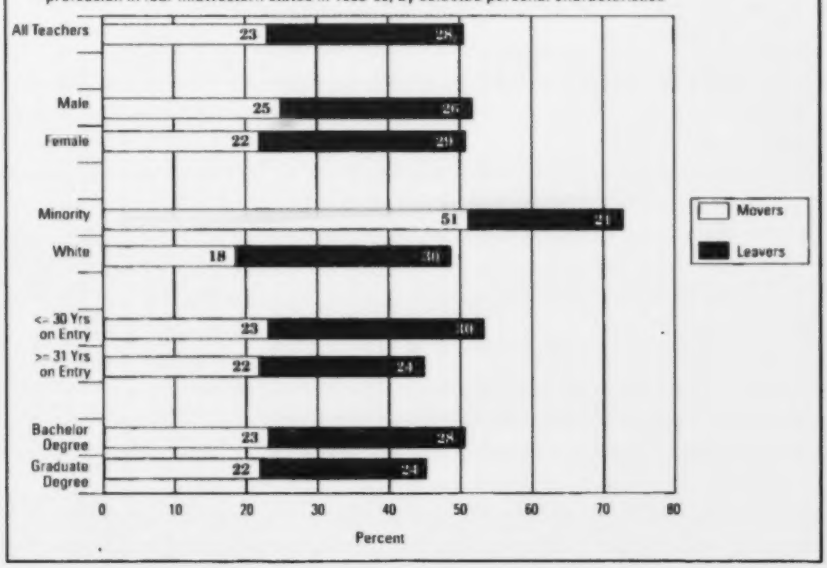
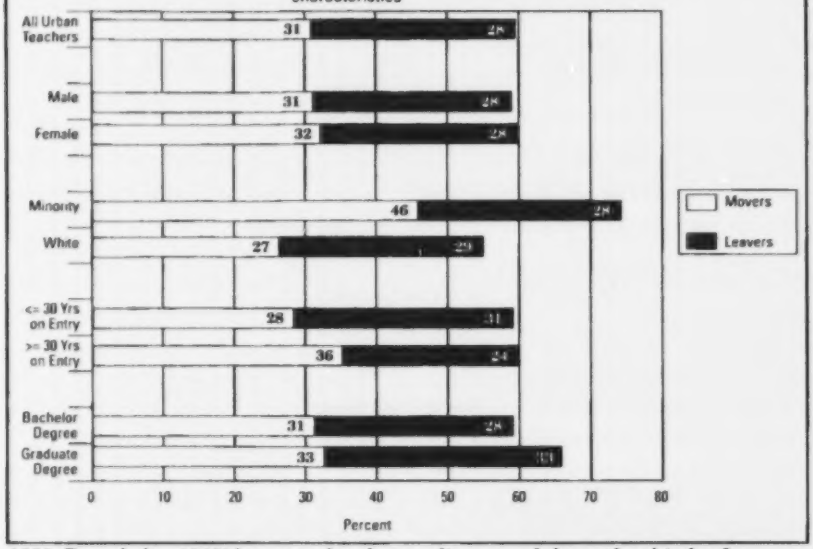


Figure 2. Percent of urban teacher turnover in five years among 3,194 teachers who entered the profession in four midwestern states in 1995-96 by selected personal characteristics



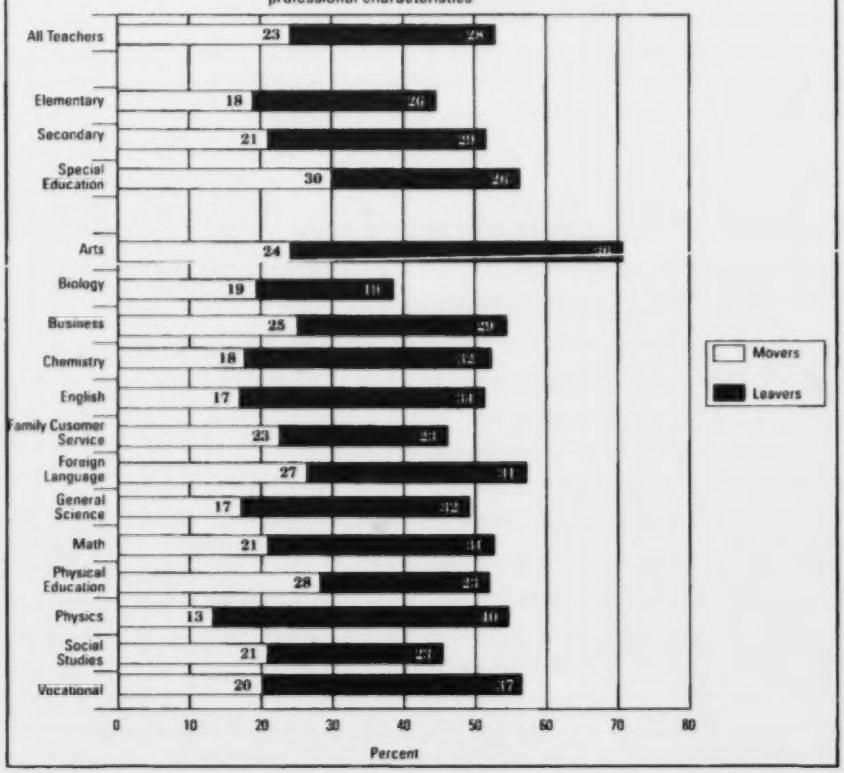
1990; Rosenholtz, 1985) has speculated that urban teachers have a higher turnover rate. These data clearly support this assumption. Urban teachers — regardless their gender, race, age, or degree status — are significantly more likely to move out of their district than are novice teachers hired by non-urban districts. Yet, urban teachers are no more likely to leave teaching than are non-urban teachers.

This result highlights the importance of including "movers" in an analysis of teacher turnover. The more narrow definition of turnover (i.e., only those who leave the teaching profession) would lead us to conclude that turnover rates are no higher in urban than in non-urban districts. When we include "movers," though, the turnover rates for minority and older teachers are more than 20 percent higher in urban districts than they are in non-urban districts.

Among the most important findings in previous research is the influence of academic field on teacher turnover. Ingersoll (2001) reports "although both special education and math/science teachers were more likely to migrate [i.e., move] than other kinds of teachers, neither was more likely to leave teaching altogether" (pp. 519-520). The data in Figure 3 concur with this finding for special educators, but differ substantially for math/science teachers. Novice special educators in these four states are more likely to transfer to another school district, but are not any more likely to leave. As with minority teachers, it may be that high demand for special education teachers provides them with a greater ability to improve their situation by transferring than is available to other teachers.

Figure 3 shows, however, that mathematics teachers — and all science teachers except those in biology — are much more likely to leave teaching and are less likely to transfer among school districts. A variety of incentives influence the labor market decisions teachers make. One set of incentives is the salaries an individual can earn in teaching compared to salaries in alter-

Figure 3. Percent of teacher turnover in five years among 11,787 teachers who entered the profession in four midwestern states in 1995-96, by selected professional characteristics



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native occupations. Research has shown that math and science teachers can expect higher salaries in their alternative professions than do other teachers and therefore are more likely to leave (Murnane et al., 1991). Interestingly, in these four states in the late 1990s, biology teachers were the least likely to leave. Clearly, the alternative career paths available to individuals trained as high school biology teachers — as well as those teaching family consumer science, physical education, and social studies — differ substantially from those open to individuals trained in physics or chemistry.

The impact of academic field on being a "mover" is also quite striking. Physical education teachers are the most likely to move and physics teachers are the least likely to move. To return to the reasoning discussed earlier for minority teachers and special educators, it appears that physical education teachers are able to improve their situation by transferring, while physics teachers cannot. The second component of this study should provide more definitive evidence, but anecdotal evidence suggests that because physical education teachers are much more likely to be coaches, a transfer to another school district allows them to "move up the ladder" in a way that is not available to physics teachers — especially if the less desirable situation facing the physics teacher is relatively low pay compared to what s/he could earn outside of the teaching profession. Few school districts pay teachers in high-wage academic fields more than they pay teachers in low-wage fields.

Policy Recommendations

The evidence presented in this report suggests that the current focus on supply-side initiatives such as Teach for America and alternative certification may be misplaced. Consistent with prior empirical research (Gritz & Theobald, 1996; Ingersoll, 1995, 2001; Theobald & Gritz, 1996), the data show that Midwest schools face excess demand for new teachers caused by teacher turnover rates in the first five years that exceed 50 percent. The focus on increasing teacher supply is likely to prove inadequate — especially for poorer and more complex school districts that are rarely on the receiving end of teacher transfers — if new teachers brought into the profession continue to move and leave in such large numbers. Thus, state policies need also — if not primarily — to address this issue from the demand-side by decreasing turnover rather than focusing solely on the supply-side.

Demand-side options include:

- Increasing teacher salaries so that the general level of teacher salaries compares favorably to nonteaching salaries in the state.
- Changing the current rigid teacher salary structure, which imposes costs to stay in teaching that vary considerably from field-to-field and individual-to-individual. What are the alternatives? Currently, there is little evidence available on the effectiveness of performance-based incentive policies. One of the primary reasons is that important attributes of teacher quality, such as the ability to convey knowledge or enthusiasm for class material, are difficult to identify and may not be related to more identifiable characteristics. Unfortunately, though, even less evidence is available on differentiating pay at the individual level to pay for attributes that are highly correlated with student performance (e.g., teacher test scores, selectivity of college).
- Instituting a retention bonus (i.e., "golden handcuffs"). Teachers that successfully complete one year of service would be eligible to participate in such a program. For each year of service a teacher would have a bonus placed aside and when they complete a fixed number of years (e.g., five years of continuous service) the first year's bonus would be distributed. Such a program could follow a five-year vesting schedule for a set period. If a teacher leaves a district, unvested funds are forfeited.
- Adopting policies that ensure equal access to high-quality teacher induction programs. Survey results cited by Hare and Heap (2001) indicate that such programs are very effective in decreasing the number of new teachers who leave.

Implications

Although the second component of this study will provide much needed data on why these differences exist, three implications seem clear. First, for the foreseeable future, efforts to improve elementary and secondary education will hinge upon our nation's ability to attract and retain qualified individuals in teaching. Second, teachers' decisions to leave their classrooms are the result of the thoughtful actions of individuals responding to incentives inside and outside of education. Lastly, state and local policymakers should think in terms of increasing or decreasing the magnitude of these incentives as they formulate policies to lower rates of turnover, and ultimately, improve student performance. As John Dewey observed nearly a century ago, "All other reforms are conditioned upon reform in the quality and character of those who engage in the teaching profession" (1903, p. 194).

References

Berman, P., & McLaughlin, M. (1977). *Federal programs supporting educational change. Vol. 7. Factors affecting implementation and continuation* (Report No. R-1589/7-HEW). Santa Monica, CA: RAND Corporation.

Bobbitt, S., Leich, M., Whitener, S., & Lynch, H. (1994). Characteristics of stayers, movers, and leavers: Results from the teacher follow-up survey, 1991-92. Washington, DC: National Center for Education Statistics.

Boe, E., Bobbitt, S., Cook, L., Barkanic, G., & Maislin, G. (1998). *Teacher turnover in eight cognate areas: National trends and predictors.* Philadelphia: University of Pennsylvania, Center for Research and Evaluation in Social Policy.

Bowman, M. J. (1973). Foreword. In K. G. Pedersen, *The itinerant schoolmaster: A socio-economic analysis of teacher turnover.* Chicago: Midwest Administration Center.

Bryk, A. S., Lee, V. E., & Smith, J. B. (1990). High school organization and its effect on teachers and students: An interpretive summary of the research. In W. J. Clune & J. F. Witte (Eds.), *Choice and control in American education: Vol. 1. The theory of choice and control in American education* (pp. 135-226). Philadelphia: Falmer.

Coleman, J. S., & Hoffer, T. (1987). *Public and private high schools: The impact of communities.* New York: Basic Books.

Darling-Hammond, L. & Green, J. (1994). Teacher quality and equality. In P. Keating & J. I. Goodlad (Eds.), *Access to knowledge.* New York: College Entrance Examination Board.

Darling-Hammond, L. & Wise, A. E. (1985). Beyond standardization: State standards and school improvement. *Elementary School Journal, 85,* 315-336.

Dewey, J. (1903). Democracy in education. *Elementary School Teacher, 4,* 193-204.

Dworkin, A. G. (1980). The changing demography of public school teachers: Some implications for faculty turnover in urban areas. *Sociology of Education, 53,* 65-73.

Fullan, M. G. (1991). *The new meaning of educational change.* New York: Teachers College Press.

Greenberg, D. H., & McCall, J. J. (1974). *Analysis of the educational personnel system: VII. Teacher mobility in Michigan* (Report No. R-1343-HEW). Santa Monica, CA: The RAND Corporation

Grissmer, D. W., & Kirby, S. N. (1987). *Teacher attrition: The uphill climb to staff the nation's schools* (Report No. R-3512-CSTP). Santa Monica, CA: The RAND Corporation.

Gritz, R. M., & Theobald, N. D. (1996). The effects of school district spending priorities on length of stay in teaching. *The Journal of Human Resources, 31,* 477-512.

Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (1999, January). *Do higher salaries buy better teachers?.* Paper presented to the Meetings of the American Economics Association.

Hare, D., & Heap, J. (2001, June). Teacher recruitment and retention strategies in the Midwest: Where are they and do they work?. *NCREL Policy Issues, 8,* 1-8.

Heyns, B. (1988). Educational defectors: A first look at teacher attrition in the NLS-72. *Educational Researcher, 17,* 24-32.

Hirsch, E., Koppich, J. E., & Knapp, M. S. (1998). *What states are doing to improve the quality of teaching* (CTP Working Paper). Seattle: University of Washington, Center for the Study of Teaching and Policy.

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Huberman, M., & Miles, M. (1984). *Innovation up close*. New York: Plenum.

Ingersoll, R. (1995). *Teacher supply, teacher qualifications, and teacher turnover*. Washington, DC: National Center for Education Statistics.

Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal, 38*, 499-534.

Kemple, J. J. (1989). *The career paths of black teachers: Evidence from North Carolina*. Paper presented at the meeting of the American Educational Research Association, San Francisco, California

Kozol, J. (1991). *Savage inequalities*. New York: Harper-Collins.

Murnane, R. J. (1987). Understanding teacher attrition. *Harvard Educational Review, 57*, 177-182.

Murnane, R. J., Singer, J. D., Willett, J. B. (1988). The career paths of teachers: Implications for teacher supply and methodological lessons for research. *Educational Researcher, 17*(5), 22-30.

Murnane, R. J., Singer, J. D., Willett, J. B., Kemple, J. J., & Olsen, R. J. (1991). *Who will teach? Policies that matter*. Cambridge, MA: Harvard University Press.

Oakes, J. (1990). *Multiplying inequalities: The effects of race, social class, and tracking on opportunities to learn mathematics and science*. Santa Monica, CA: The RAND Corporation.

Rosenholtz, S. J. (1985). Political myths about education reform: Lessons from research on teaching. *Phi Delta Kappan, 66*, 349-355.

Rosenholtz, S. J. (1987). Education reform strategies: Will they increase teacher commitment? *American Journal of Education, 95*, 534-562.

Theobald, N. D., & Gritz, R. M. (1996). The effects of school district spending priorities on the exit paths of beginning teachers leaving the district. *Economics of Education Review, 15*, 11-22.

Who Stays, Leaves, and Moves?

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